dpr Department of Pesticide Regulation

Paul E. Helliker
Director

Gray Davis
Governor

Winston H. Hickox
Secretary, California Environmental Protection Agency

June 30, 2000

The Honorable Steve Peace, Chairman
Joint Legislative Budget Committee
State Capitol, Room 3060
Sacramento, California 95814

Dear Senator Peace:

The Supplemental Report of the 1999 Budget Act requires the Department of Pesticide Regulation (DPR) to report specified information to the chairs of the Joint Legislative Budget Committee and the Senate and Assembly fiscal committees on January 1, April 1, and June 30, 2000. The attached report is for the 1999-2000 fiscal year.

The attached report outlines DPR's performance measures in each of the following categories: (1) the Toxic Air Contaminant Program (AB 1807); (2) the Birth Defect Prevention Act (SB 950); (3) the Groundwater Protection Act (AB 2021); (4) DPR's reduced-risk efforts; and (5) DPR's worker protection program.

This report fulfills the June 30, 2000, report obligation. It describes the progress DPR has made in achieving each of these project objectives, and updates the major milestones and time frames for each project.

I look forward to working with you and other members of the Legislature to continue progress in reducing the risks of pesticide use in California. If you have any questions, please feel free to contact me.

Sincerely,

Paul Helliker

Paul E. Helliker
Director
(916) 445-4000

Attachment

cc: See next page.

cc: (all listed received attachment)
Senator James Brulte, Vice Chair, Budget and Fiscal Review Committee
Assembly Member Denise Moreno Ducheny, Chair, Assembly Budget Committee
Assembly Member George Runner, Vice Chair, Assembly Budget Committee
Senator Tom Hayden, Senate Budget Subcommittee 2
Senator Byron Sher, Senate Budget Subcommittee 2
Senator Cathie Wright, Senate Budget Subcommittee 2
Assembly Member Virginia Strom-Martin, Assembly Budget Subcommittee 3
Assembly Member Tony Cardenas, Assembly Budget Subcommittee 3
Assembly Member Dave Cox, Assembly Budget Subcommittee 3
Assembly Member Fred Keeley, Assembly Budget Subcommittee 3
Senator President Pro Tempore John Burton
Assembly Speaker Antonio Villaraigosa
Senator Patrick Johnston, Chair, Senate Appropriations Committee
Senator Tim Leslie, Vice Chair, Senate Appropriations Committee
Assembly Member Carole Migden, Chair, Assembly Appropriations Committee
Assembly Member Marilyn Brewer, Vice Chair, Assembly Appropriations Committee
Ms. Elizabeth Hill, Legislative Analyst
Mr. Mark Newton, Legislative Analyst's Office
Mr. Fred Klass, Department of Finance
Ms. Adrienne Alvord

bcc: (all listed received attachment)
Senator Jim Costa, Chair, Senate Agriculture and Water Resources Committee
Assembly Member Dennis Cardoza, Chair, Assembly Agriculture Committee
Assembly Member Hannah-Beth Jackson, Chair, Environmental Safety and Toxic Materials Committee
Mr. Winston Hickox, Secretary, California Environmental Protection Agency
Mr. Brian Haddix, Undersecretary, California Environmental Protection Agency
Ms. Patty Zwarts, Cal/EPA Acting Legislative Director
Mr. Paul Gosselin, DPR Acting Chief Deputy Director
Ms. Veda Federighi, DPR Communications Director
Mr. Doug Okumura, DPR Acting Assistant Director
Dr. Gary Patterson, DPR Acting Assistant Director
Mr. Ron Oshima, DPR Assistant Director
Mr. Chuck Andrews, Chief, DPR Worker Health and Safety Branch
Mr. Barry Cortez, Chief, DPR Pesticide Registration Branch
Mr. David Duncan, Acting Chief, DPR Pesticide Enforcement Branch
Dr. Joyce Gee, Acting Chief, DPR Medical Toxicology Branch
Mr. John Sanders, Chief, DPR Environmental Monitoring and Pest Management Branch

DEPARTMENT OF PESTICIDE REGULATION'S MID-YEAR REPORT REQUIRED BY THE SUPPLEMENTAL LANGUAGE OF THE 1999 BUDGET ACT

In the 1999/00 Budget Act, supplemental language directed the Department of Pesticide Regulation (DPR) to report fiscal performance measures to the chairs of the Joint Legislative Budget Committee and the Senate and the Assembly in each of the following categories: (1) the Toxic Air Contaminant Program (AB 1807); (2) the Birth Defect Prevention Act (SB 950); (3) the Ground Water Protection Program (AB 2021); (4) DPR's reduced-risk efforts; and (5) DPR's worker protection program.

This report describes the progress DPR has made in fulfilling each of these project objectives, and updates the major milestones and time frames for each project.

I. TOXIC AIR CONTAMINANT PROGRAM (AB 1807) Performance Measures

A. List of Pesticide Monitoring Requests Submitted to the Air Resources Board

Since July 1999, staff from DPR, the Air Resources Board (ARB), and the Scientific Review Panel (SRP) have discussed improving the methodology to identify pesticides for monitoring under AB1807. Improving the pesticide monitoring effort was a topic of SRP's Pesticides in Air Workshop held in September. DPR and ARB recognize the need to revise the monitoring methodology. SRP prepared a series of recommendations to DPR and ARB including: modeling data collected during the toxic air contaminant (TAC) studies; collecting additional data; monitoring for multiple pesticides concurrently; and/or monitoring on a regional basis.

Based on these discussions, the monitoring list outlined in the June 22, 1999, memorandum has been revised. A revised list based on DPR and ARB staff recommendations was proposed and discussed with SRP at their November 1999 meeting. The new list includes the pesticides benomyl, metam-sodium, 1,3-dichloropropene, methyl bromide, and chloropicrin, and their breakdown products of concern.

B. Status of the Air Resources Board's Toxic Air Contaminant Monitoring Reports

ARB submitted the final report for simazine on November 22, 1999. During 1999, ARB conducted monitoring studies for the following chemicals: amitraz, cycloate, atrazine, diquat, bifenthrin, and propargite. The final monitoring reports are in progress.

C. DPR Submission of Six Toxic Air Contaminant Documents During 1999-2000

The following TAC documents have been submitted to SRP, or are in the process of being submitted during 1999-2000: S,S,S, tributylphosphorotrithioate (DEF), methyl parathion, methyl isothiocyanate (MITC), azinphos-methyl, molinate and chlorpyrifos.

The evaluation of DEF was accepted by SRP, and DPR received SRP's findings on June 4, 1999. DPR began the formal rulemaking process to list DEF as a TAC with the release of the public notice on July 30, 1999. A public hearing was held on September 28, 1999, and the public comment period closed that same day. DPR submitted the package to the Office of Administrative Law in December 1999. The regulation was approved on January 31, 2000, and became effective March 2, 2000.

The revised methyl parathion report was submitted to SRP on September 16, 1999, and was conditionally accepted pending minor revisions. SRP submitted their findings on the methyl parathion document on November 4, 1999. DPR began the formal rulemaking process with the release of a public notice on May 26, 2000. The public hearing will be held on July 11, 2000.

The MITC report was accepted by the SRP on November 17, 1999. SRP prepared their findings on the MITC report at the May 25, 2000, meeting. DPR expects formal submission of the findings in July.

The following table highlights the target dates for processing the three remaining reports. In the past, DPR did not adequately coordinate the release of the reports for public review with the subsequent workshop, and the public did not have adequate time to review the reports. Therefore, DPR lengthened the public review time from 30 to 45 days. DPR plans to time the public release to occur approximately 30 days prior to the workshop date and to extend for an additional 15 days after the workshop. Whenever possible, the workshop will continue to be held during DPR's regularly scheduled Pesticide Registration and Evaluation Committee (PREC) meetings because many persons interested in DPR's regulatory process attend these meetings. DPR staff recently met with the staff from the Office of Environmental Health Hazard Assessment (OEHHA) and ARB to develop methods to better coordinate the time for review of reports by their staff, and to provide adequate time for the development of findings by OEHHA. OEHHA, ARB, and SRP leads will review the reports during the public comment period. Additional time was built into the schedule to provide OEHHA sufficient time to develop findings. A copy of the draft report and this table will also be made available on DPR's Web site.

Schedule for Processing Toxic Air Contaminant Program Reports

Chemical Name	45-day Public Comment Begins[a]	Public Workshop[b]	45-day Public Comment Ends	Revised Draft with OEHHA Findings Sent to SRP[c]	DPR Staff Ready for Presentation to SRP	SRP Meeting[d]	SRP Lead Reviewers
Azinphos-methyl	Nov 15, 1999	Dec 17, 1999	Dec 31, 1999	July 3, 2000[e]	Aug, 2000	TBD	Dr. Froines Dr. Fucaloro
Molinate	Mar 8, 2000	Mar 17, 2000	Apr 21, 2000	Aug 22, 2000[f]	Sept, 2000	TBD	Dr. Blanc Dr. Fucaloro
Chlorpyrifos[f]	Aug 11, 2000	Sept. 15, 2000	Sept 27, 2000	Dec 4, 2000	Jan, 2001	TBD	TBD

Notes:

a At the onset of the public comment period, DPR will send copies to the Air Resources Board (ARB), Office of Environmental Health Hazard Assessment (OEHHA), Scientific Review Panel (SRP) leads, and the public. DPR will also post the draft report to their web page.

b Public workshop held during regularly scheduled Pesticide Registration and Evaluation Committee (PREC) meeting, unless otherwise noted.

c DPR will include Part D (Response to Public Comments) and a copy of OEHHA's findings with each report when it is sent to the SPR members in preparation for the DPR staff presentation. Revised draft posted to DPR web page.

d The SRP meeting date where report will be presented and discussed.

e This date is contingent upon receiving OEHHA's final findings no later than June 30, 2000.

f This date is contingent upon receiving OEHHA's comments on the report no later than June 23, 2000, and the final OEHHA findings no later than August 18, 2000.

TBD = To Be Determined

D. Pesticides Listed as Toxic Air Contaminants

On March 3, 2000, DPR listed DEF as a TAC. DPR plans to begin mitigation evaluation during 2000 (see comment regarding DEF in part E, below).

DPR is currently engaged in the rulemaking process to list methyl parathion as a TAC. The completed rulemaking package will be submitted to the Office of Administrative Law in July 2000.

E. Toxic Air Contaminants Requiring Mitigation

Mitigation measures have been developed for the following TACs. Consistent with the Act, DPR consults with the county agricultural commissioners (CACs), air pollution control districts, ARB, and OEHHA prior to imposing control measures.

DEF

DPR recently sent a letter to the CACs and the Air Pollution Control Officers notifying them that DEF had been declared and listed as a TAC and that DPR will soon begin its evaluation to determine if additional control measures are needed with respect to the use of DEF. DPR solicited the input from those organizations and promised to keep them informed of any additional information it collects during the evaluation process. This is the first TAC mitigation evaluation that DPR will conduct; therefore, during the course of this evaluation, DPR will also be developing the methods and communication networks that will be employed in future evaluations of this type.

1,3-Dichloropropene

DPR first implemented mitigation measures for 1,3-dichloropropene in 1990 in the form of permit suspensions. A limited reintroduction of 1,3-dichloropropene uses began in 1994. The reintroduction was subject to permit conditions regarding: (1) limits on the amount of 1,3-dichloropropene which can be applied; (2) specifications for application methods; (3) soil moisture requirements; (4) buffer zones which delineate areas in which no 1,3-dichloropropene may be applied adjacent to occupied structures; and (5) personal protective equipment requirements for workers. The risk assessment for 1,3-dichloropropene was reopened to evaluate recently submitted acute toxicity data and current use patterns.

Methyl Bromide

DPR first implemented mitigation measures for methyl bromide in 1992 in the form of regulations and suggested permit conditions for restricted materials permits. The mitigation measures include: (1) restrictions on the amount of methyl bromide that could be applied; (2) specifications for application methods; (3) work-hour limitations for applicators and other workers; and (4) buffer zones which delineate areas in which no methyl bromide may be applied adjacent to occupied structures.

The public comment period for the original notice on the methyl bromide field fumigation regulations closed on March 17, 2000. DPR released the public notice for a second public comment period on June 5, 2000; this comment period will close on June 20, 2000. In the summer of 2000, DPR will propose regulations for commodity sites and greenhouse methyl bromide uses.

II. BIRTH DEFECT PREVENTION ACT (SB 950)
Performance Measures

A. List of pesticides from the high priority list for risk assessment for which a Risk Characterization Document will be completed by June 2000.

B. Commitment to track and report on actual number of Risk Characterization Documents that required mitigation measures.

The priority active ingredients for SB 950 are identified in section 13127(a) of the Food and Agricultural Code. In PREC's report number 35 (January 17, 1997), there were 69 active ingredients in the high priority category for risk assessment. Risk assessments have been completed for 19 of these active ingredients. DPR has shown considerable progress in completing risk assessments as demonstrated by the fact that 12 of the 19 completed risk assessments have been completed since January 1997. Additionally, DPR has completed five final draft documents that have been or are currently being peer reviewed by outside regulatory or scientific groups.

The most recent PREC report number 41 (March 17, 2000) has 76 active ingredients in the high priority category. The reasons for this increase since PREC reports number 35 and 40 are: (1) five new active ingredients have been added to the high priority category since report number 40 was released; (2) five active ingredients with completed risk assessments have some pending mitigation and, therefore, have not been removed from the list; and (3) one active ingredient with a completed risk assessment and no required mitigation was removed from the list.

DPR's immediate progress in completing risk assessments can be largely attributed to the finalization of risk assessments that were under development for many years. Once the backlog of risk assessments is cleared, the current level of resources will allow DPR to handle six to eight risk assessments per year.

There are two factors that will affect the pace of risk assessment completion. First, the amount of resources needed to develop and implement mitigation measures was never factored into DPR's program. Secondly, changes to pesticide risk assessment policies, largely driven by the federal Food Quality Protection Act, has lead to delays in finalizing some assessments.

The following text provides the status of the Risk Characterization Documents (RCDs) for the pesticides on the high priority list for risk assessment. It includes notations on mitigation measure requirements.

Status of High Priority Risk Assessments

RCD Completed/Approved--Mitigation Not Required (8)
Benomyl
Cyanazine
DEET
Diquat
Molinate
Pentachlorophenol
Propoxur
Telone (1, 3 dichloropropene)

RCD Completed/Approved--Mitigation Required (11)
Amitraz
Azinphos-methyl
Cycloate
DDVP
DEF
EPTC
Ethoprop
Methyl Bromide
MITC
Naled
Propetamphos

RCD Completed/Under Final DPR Review (5)
Chlorothalonil
Metam Sodium
Deltamethrin
Methidathion
Thiabendazole

RCD Under Development (21)
Atrazine
Acephate
Captan
Carbofuran
Carbaryl
Chloropicrin
Chlorpyrifos
Diazinon
Endosulfan
ETU
Hydromethylnon
Mancozeb
Maneb

Methyl parathion
Methamidophos
Methomyl
Propargite
Simazine
Sulfuryl fluoride
Triadimefon
Vinclozolin

III. GROUND WATER PROTECTION PROGRAM (AB 2021)
Performance Measures

A. Status of the Well Inventory Report

DPR released the 1999 Well Inventory Report in March 2000. The 2000 report is due in December 2000. (This report is required under Food and Agricultural Code section 13152[e]).

B. List of Pesticides Added to the Groundwater Protection List

No pesticides were added to the Groundwater Protection List (GWPL) during the third quarter of the 1999/2000 budget year. (The GWPL resides under Title 3 of the California Code of Regulations, section 6800.)

C. Total Number of Pesticide Management Zones Added to the Regulations

No new Pesticide Management Zones (PMZs) were added to the regulations during the third quarter of the 1999/2000 budget year (more than 300 new PMZs were added in May of 1999). PMZs are specific areas determined to be sensitive to pesticide movement to ground water based on actual detections of pesticides. DPR plans to propose adding PMZs for norflurazon in June of 2000, based on its recent detection in ground water, as part of the first of two sets of ground water regulation changes described below.

<u>First Set of Regulation Changes</u>

The first set of regulation changes will also implement the Director's finding for norflurazon. The norflurazon finding was made following its detection in ground water as a result of legal agricultural use and subsequent to the formal review that is required by the Pesticide Contamination Prevention Act (PCPA). Following the review, the Director found that the use of norflurazon should be prohibited in areas managed to recharge ground water, and in ditch and canal banks within norflurazon PMZs. Both the norflurazon PMZs and the use prohibitions will be adopted in regulation. This set of regulations is expected to be noticed for public comment in June 2000, and go into effect four to six months later.

Second Set of Ground Water Regulations

DPR does not plan to add PMZs for other pesticides listed in section 6800(a) because DPR plans to propose a completely new approach to ground water protection in a second set of ground water regulations. As pointed out in the recent report by the California Public Interest Research Group (CalPIRG), *Toxics on Tap*, the technical, economic, and logistical difficulties involved in cleaning up ground water that has been contaminated dictate a conservative and proactive approach to protecting this vital resource. The new approach DPR is proposing will amend the regulations to expand protection from those areas where contamination has already occurred, and to those areas where soil, meteorology, and shallow ground water make them vulnerable to contamination. This will expand the regulated areas many-fold. Instead of simply discouraging the use of specific pesticides in these areas, the regulation will prohibit their use unless specific irrigation and runoff conditions are met. In addition, DPR will significantly expand the list of pesticides regulated for ground water protection from those pesticides already found in California ground water due to agricultural use, to additional pesticides that the Director determines have a high potential to move to ground water.

These regulations are being developed to revise the current DPR Ground Water Protection Program based on scientific data collected and analyzed since the PCPA was passed in 1985. The proposed ground water regulation revisions include the following measures, which will enhance the preventive nature of the program: (1) adopting a wellhead protection program; (2) declaring additional pesticides to be restricted materials, and requiring users of these pesticides to adopt specific management practices to protect ground water; (3) replacing the current PMZs that are based on actual detections of pesticides in ground water, with ground water protection areas (GWPAs) that are based on soil types and depth to ground water; (4) adopting mitigation measures to prevent runoff in runoff GWPAs, and prevent leaching in leaching GWPAs; (5) requiring permits for the use of ground water pesticides in GWPAs; (6) requiring permittees to be trained in ground water protection before a permit can be issued; (7) deleting ground water protection advisories; and (8) requiring agricultural pest control advisers to be trained before recommending the use of a ground water pesticide anywhere in California.

DPR plans to notice these new ground water protection regulations in July 2000 and will implement them in three phases: (1) the wellhead protection measures will go into effect January 1, 2001; (2) the remaining changes, except for the leaching GWPAs, will become effective on January 1, 2002; and (3) the leaching GWPAs will become effective January 1, 2003.

Implementing the more proactive measures to prevent ground water contamination may require additional resources. Current law authorizes DPR's Director to request these needed resources. Specifically, Food and Agricultural Code section 13147 requires the Director to submit an annual request, beginning December 1, 1987, for a

budget appropriation to fund ground water monitoring activities, data review, and the administration of economic poisons placed on the GWPL.

D. List of Study Reviews Completed

DPR completed the data review requirements of AB 2021. Evaluations were completed for eight active ingredients (12 studies) between January 1, 2000, and June 30, 2000. There are no active ingredients awaiting review. Additional evaluations may be required for studies that are incomplete or otherwise deficient.

IV. REDUCED-RISK EFFORTS
Performance Measures

A. Pesticide Use Report Schedule of Release

DPR released the final version of the 1998 PUR in February, 2000. DPR has committed to releasing the preliminary version of the 1999 PUR by July 1, 2000, and the final version of the 1999 PUR in January 2001. Subsequent reports will be released by July 1 and January 1 of each year.

B. Reporting Usage of High-Risk Pesticides and Reduced-Risk Materials

DPR has committed to tracking and reporting usage trends of pesticides in high-risk categories and pesticides identified as reduced-risk materials. This commitment is reflected in DPR's completed 1998 and 1999 PUR analyses. The 1998 and 1999 PUR includes:

- Pesticides listed on the State's Proposition 65 list of chemicals "known to cause reproductive toxicity."
- Pesticides listed by the U.S. Environmental Protection Agency as B^2 carcinogens, or on the State's Proposition 65 list of chemicals "known to cause cancer."
- Pesticides that are cholinesterase inhibitors (organophosphate and carbamate chemicals).
- Pesticides on the GWPL (Title 3, California Code of Regulations section 6800[a]).
- Pesticides on the TAC list (Title 3, California Code of Regulations section 6860).
- Pesticides that are oils, which may include some chemicals on the State's Proposition 65 list of chemicals "known to cause cancer" but which also serve as alternatives to high-toxicity pesticides.

- Pesticides that have been given reduced-risk status by the U.S. Environmental Protection Agency.

- Pesticides classified as biopesticides, which include microorganisms and naturally occurring compounds, or compounds essentially identical to naturally occurring compounds, that are not toxic to the target pest (such as pheromones).

The PUR analyses, as well as pesticide use analysis and trends from 1991 to 1996, are available on DPR's Web site at <www.cdpr.ca.gov>.

C. Reduced-Risk Product Registrations

DPR has committed to tracking and reporting the number of new reduced-risk product registrations. In light of this commitment, DPR has noted the following information that pertains to reduced-risk product registration: for the entire fiscal year 1999-2000, six reduced risk products were registered (two in the first quarter, one in the second, two in the third, one in the fourth quarter). Eighteen reduced risk products remain in evaluation at this time.

DPR has changed the structure of its Registration Branch to enable it to fast track the registration of reduced-risk pesticides. This change in structure includes adding the following positions: (1) one position to coordinate the timing of reduced-risk pesticide product registrations with the U.S. Environmental Protection Agency; (2) one position to help evaluate antimicrobial products; (3) one point person designated to coordinate the processing of all microbial and biochemical products; (4) three chemistry positions to reduce the large chemistry backlog; and (5) four Registration Specialist positions to help expedite the processing of all pesticide products.

D. Adoption of Reduced-Risk Pest Management Systems

DPR is legally mandated to assure the proper, safe, and efficient use of pesticides while protecting workers, consumers, and the environment. To accomplish this mandate, DPR encourages the development and implementation of reduced-risk pest management systems by providing pest management grants, and by promoting the Pest Management Alliance Program. Grant recipients are expected to demonstrate an increased level of grower, pest control adviser, or urban pest manager participation in the second and third year of their continuing reduced-risk pest management projects. Alliance Program participants are required to demonstrate that their approach to reduced-risk pest management will produce a measurable human health-related risk reduction or will reduce adverse impacts on the environment.

Grant projects that are deemed the most likely to receive funding are those aimed at reducing human health risks (especially agricultural worker health risks) and environmental risks. This represents a shift in focus; grants were once awarded for the development of reduced-risk replacement systems for pest management materials that may be impacted through the implementation of the Food Quality Protection Act,

or for developing critical components for threatened or disrupted pest management systems. This change in focus is effected through the criteria outlined in the pest management grant request for proposals.

DPR is working with the Pest Management Advisory Committee (PMAC) to identify ways to document the adoption of the reduced-risk pest management systems. DPR has also discussed various methods of identifying, tracking, and reporting the adoption of reduced-risk practices with other public and private groups. (In cases where higher risk pesticides and their reduced-risk alternatives are registered pesticides, the PUR has been used to assess changes in use, and in the percentage of growers using higher risk pesticides or their reduced-risk alternatives.)

Through DPR's Pest Management Grants Program, DPR staff is beginning to collect information not currently available in the PUR. Those who submit proposals for reduced-risk pest management projects are asked to describe their project region (i.e., number of acres, commodities, or sites comprising the area as a whole). Applicants are also asked to describe the affected community, including the number of growers and pest control advisers in the project region. This information is used to measure grower and pest control adviser awareness of reduced-risk options and to identify those using and adopting cultural and biological alternatives to high-risk pesticides.

DPR held a Pest Management Alliance Workshop in Sacramento on March 28, 2000. DPR's Pest Management Alliance Program is unique in that it is devoted to reducing pesticide risks, while establishing a dialogue between interested participants and DPR. Agricultural and nonagricultural groups submit proposals for projects to address key areas of concern—those that demonstrate alternatives to highly toxic pesticides, protect surface and ground water quality, develop integrated pest management programs for public schools and other public buildings, and develop alternative reduced-risk approaches for urban pest management. The Pest Management Alliance Program promotes a concept of voluntary cooperative problem-solving, which creates a climate where growers and urban and suburban residents are better informed and more willing to try to implement the reduced-risk practices that work. The workshop, cosponsored by the Almond Board of California, provided a forum to discuss "what makes an alliance work." Practical presentations by the poultry and almond alliances provided an insight into why their particular efforts are a success. Groups also presented tabletop displays to highlight the progress of their projects. The event attracted over 50 alliance members. Feedback has provided DPR with information to help streamline and improve the Alliance Program.

V. WORKER PROTECTION
Performance Measures

A. Protecting Farmworkers from Pesticides

In response to the 1999 report entitled *Fields of Poison: California Farmworkers and Pesticides*, DPR met with worker advocate groups in July and November 1999. Discussions centered on five program areas:

1. Pesticide Illness and Injury Reporting System
2. Investigations and Complaints
3. Worker Exposure
4. Hazard Communication and Notification
5. Enforcement

DPR initiated a review of the Hazard Communication Program and notification and posting requirements as a first step in improving farmworker safety. DPR discussed advocacy group recommendations with the county agricultural commissioners (CACs) and reviewed CAC comments. In addition, DPR plans to take the advocacy group recommendations to industry groups and get their comments. Once comments are received, DPR will evaluate the comments and recommendations and determine if regulatory action is needed. (This issue is a component of the Enforcement Initiative undertaken by DPR.)

B. Pesticide Illness Surveillance Program

DPR committed to the completion of the 1998 annual Pesticide Illness Surveillance report on December 31, 1999. The report was completed and approved for release on February 15, 2000. DPR has committed to the completion of the 1999 report by December 31, 2000.

Worker Health and Safety (WH&S) Branch staff completed the report *Physician Reporting of Pesticide Illnesses, Part I. Mass Mailing and Personal Notification, 1994-1996*. This report documents the efforts and results of a pilot project designed to improve physician reporting of pesticide-related conditions. As a result of these efforts, physician reporting increased from a low of 12% to 30% of the total cases reported to the pesticide illness surveillance program.

C. Workplace Evaluations

Following training by an occupational health trainer, a procedure was developed for referral of potential health concerns to the WH&S branch. WH&S staff has investigated and resolved the following issues:

- Evaluate the unregistered use of paraformaldehyde for the sterilization of biological safety hoods. WH&S received information from both the National Institute for Occupational Safety and Health, and the California Occupational Safety and Health Administration about an initial, specific incident involving the use of paraformaldehyde. A letter was sent to the CACs to let them know that this chemical may be subject to this illegal use.

- Evaluate the necessity for wearing respiratory protection when applying a dilute solution of the pesticide naled to insect traps. This issue was reviewed, monitoring was conducted, and a recommendation was made to the interested party. Possible mitigation methods were identified that would allow individuals to apply naled without having to rely on the use of personal respiratory protection.

- Investigate concerns about the incompatibility of mixing antimicrobial pesticides in restaurant settings. To date, attempts to follow up on this issue have not been successful.

D. Field Monitoring Studies

From July 1999 to the present, WH&S staff completed the following field monitoring study reports:

- Spencer, J.R., S. Edmiston, C. Cowen, B.Z. Hernandez, M.K. Orr, F. Schneider, and V. Quan. 1999. Exposure of Hand Applicators to Triclopyr in Forest Settings, 1995. Health and Safety Report No. HS-1769.

- Schneider, F. and S. Fredrickson, 1999. Abamectin Dislodgeable Foliar Residues Following Reduced-Volume and Conventional Pesticide Applications in a Greenhouse. Health and Safety No. HS-1780.

- Hernandez, B.Z., J.R. Spencer, S. Edmiston, F. Schneider, S. Powell, and C. Benson, 1999. Comparison of Initial Deposition and Residue Dissipation for Conventional vs. Reduced-Volume Pesticide Applications. Health and Safety No. HS-1793.

- Edmiston, S., F. Schneider, B. Hernandez, A.S. Fredrickson, V. Quan, 1999. Exposure And Illness Following Early Reentry into a Carbofuran-Treated Field. Health and Safety No. HS-1779.

WH&S is developing study reports for the following projects:

- Reduced-volume versus conventional applications on grapes.

- Reduced-volume versus conventional applications on strawberries.

- Fieldworker exposure to captan applied to strawberries.

- WH&S finding in the investigation of priority episode 44-FRE-99.

- Greenhouse field worker exposure to malathion and diazinon.

- Dislodgeable foliar residue (DFR) sampling at the expiration of the restricted-entry interval (REI).

- WH&S findings in the investigation of a priority episode involving early reentry into a cotton field treated with tribufos (DEF).

From July 1999 to the present, WH&S staff conducted the following field-related activities:

- Greenhouse fieldworker exposure. WH&S staff is contacting additional cooperators to conduct additional monitoring.

- WH&S participated in the investigation of priority episode 43-FRE-99. WH&S staff collected urine samples from members of a work crew impacted by pesticide drift from a local aerial applicator. The samples will be used to estimate the actual exposure of the workers.

- WH&S participated in the investigation of priority episode 44-FRE-99. DFR samples collected by WH&S field staff revealed high levels of propargite and uncovered the use of an illegal pesticide, cyhalothrin, at extremely high levels. Follow-up to this incident was undertaken; WH&S conducted focused DFR sampling to determine if propargite was dissipating more slowly than expected, and if cyhalothrin had been used in other vineyards.

- WH&S participated in the investigation of an early reentry incident involving the cotton defoliant, tribufos. Mitigation action for tribufos is under consideration. WH&S staff conducted DFR sampling to evaluate DFRs at 24 and 48 hours post-application.

- WH&S staff is developing a study protocol for validating worker exposure hand-sampling methods.

- WH&S staff is evaluating all pesticide-related illnesses involving the application of pesticides in structures.

- WH&S is evaluating all pesticide-related illnesses involving the use of hand-held application equipment.

- WH&S is developing guidelines for involvement in the investigation of pesticide-related incidents. WH&S plans to become more involved in the human health and occupational safety aspects of these incidents.

- Day of Reentry Sampling. WH&S staff is collecting foliage samples at the expiration of the REI to evaluate the adequacy of the REIs. This is an ongoing project.